METHOD FOR VAPOR GROWTH OF GALLIUM NITRIDE COMPOUND SEMICONDUCTC

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Abstract of **JP63188938**

PURPOSE:To realize the vapor growth of a gallium nitride compound semiconductor thin film by a method wherein a buffer layer composed of aluminum nitride is grown on an a-plane of a sapphire substrate.

CONSTITUTION:A single-crystal sapphire substrate 24, which has been cleaned by an organic cleaning method and a heat treatment and whose main plane is an a-plane, is mounted on a susceptor; the sapphire substrate 24 is vapor-etched while H2 is flowing into a reaction chamber through a first reaction-gas pipe 25 and a second reaction-gas pipe 26. Then, after the temperature has been lowered, the substrate is heat-treated while H2, NH3 and trimethylaluminum are fed through the first reaction-gas pipe 25. During this heat treatment, a buffer layer 30 composed of AlN is formed. Because a gallium nitride compound semiconductor thin film is formed vapor growth on this buffer layer, the crystallinity is improved and it becomes easy to supply the sapphire substrate.